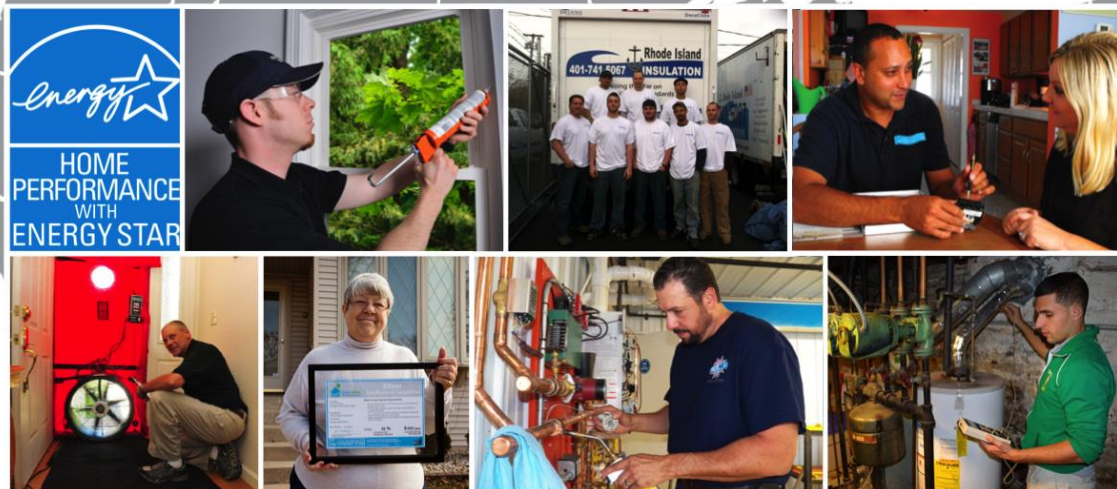


Home Performance with ENERGY STAR Partner Meeting



Follow the action on Twitter [#HPC17](#) [#HPwES](#)

Thank you for joining us!



Who do we have in the audience?

Partner Meeting Agenda

1:00 PM Welcome & National Program Update

1:35 PM EPA Indoor airPLUS Program

1:45 PM Home Performance with ENERGY STAR Sponsor Panel

2:55 PM Break

**3:15 PM Using Home Energy Score to Promote Home Performance with
ENERGY STAR, Weatherization, and More**

3:50 PM How to Work in Both Weatherization and Home Performance

4:00 PM Contracting Industry Panel

5:00 PM Wrap Up

National Program Update

Ely Jacobsohn, Home Performance with ENERGY STAR Program Manager, U.S. Department of Energy

Topics for Discussion

Updates on the last year
What we are focusing on now



Why Ely's encouraged....



National Home Performance with ENERGY STAR Update

15th Anniversary of HPwES!



Ely Jacobsohn, DOE, HPwES Program Manager

What is Home Performance with ENERGY STAR?

A public-private voluntary partnership program focused on turning building science-based recommendations into solutions for improved, energy-efficient homes

- ✓ **Trust** – the work and the worker
- ✓ **Quality** – third-party quality assurance
- ✓ **Whole-House Approach** – methodical, thoughtful improvements



The most common projects



SEALING AIR LEAKS AND ADDING INSULATION*

These are critical first steps to improving the energy efficiency of your home.



SEALING DUCTWORK

Making sure ducts are straight, properly connected, sealed, and insulated where needed, will greatly improve your home's comfort and energy efficiency.



INSTALLING RENEWABLE ENERGY SYSTEMS

Once energy efficiency improvements have been made to your home, your participating contractor may recommend additional measures, like installing solar panels or a solar hot water system.



IMPROVING HEATING, COOLING, AND VENTILATION SYSTEMS

If your furnace or air conditioner is old or in need of repair, your contractor may recommend that you replace it with a unit that has earned the ENERGY STAR label.

Adding whole-house control systems can allow you to adjust and automate settings instantly for added savings and comfort.



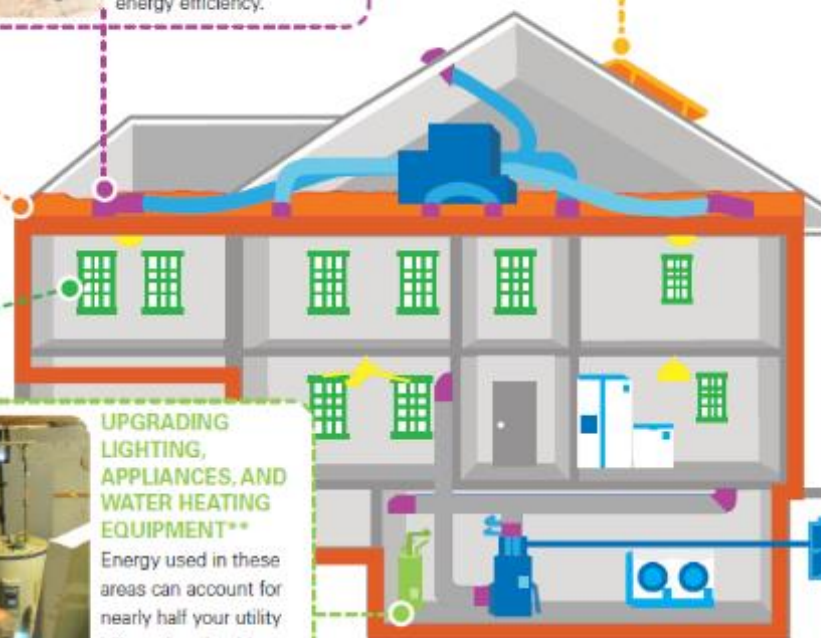
REPLACING WINDOWS

If it's time to replace your home's windows, your contractor may recommend ENERGY STAR qualified models specific to your climate.



UPGRADING LIGHTING, APPLIANCES, AND WATER HEATING EQUIPMENT**

Energy used in these areas can account for nearly half your utility bill, so there's a big opportunity to save by installing ENERGY STAR qualified products.



*Photo credit: Austin Energy Home Performance with ENERGY STAR

**Photo credit: New Jersey Home Performance with ENERGY STAR



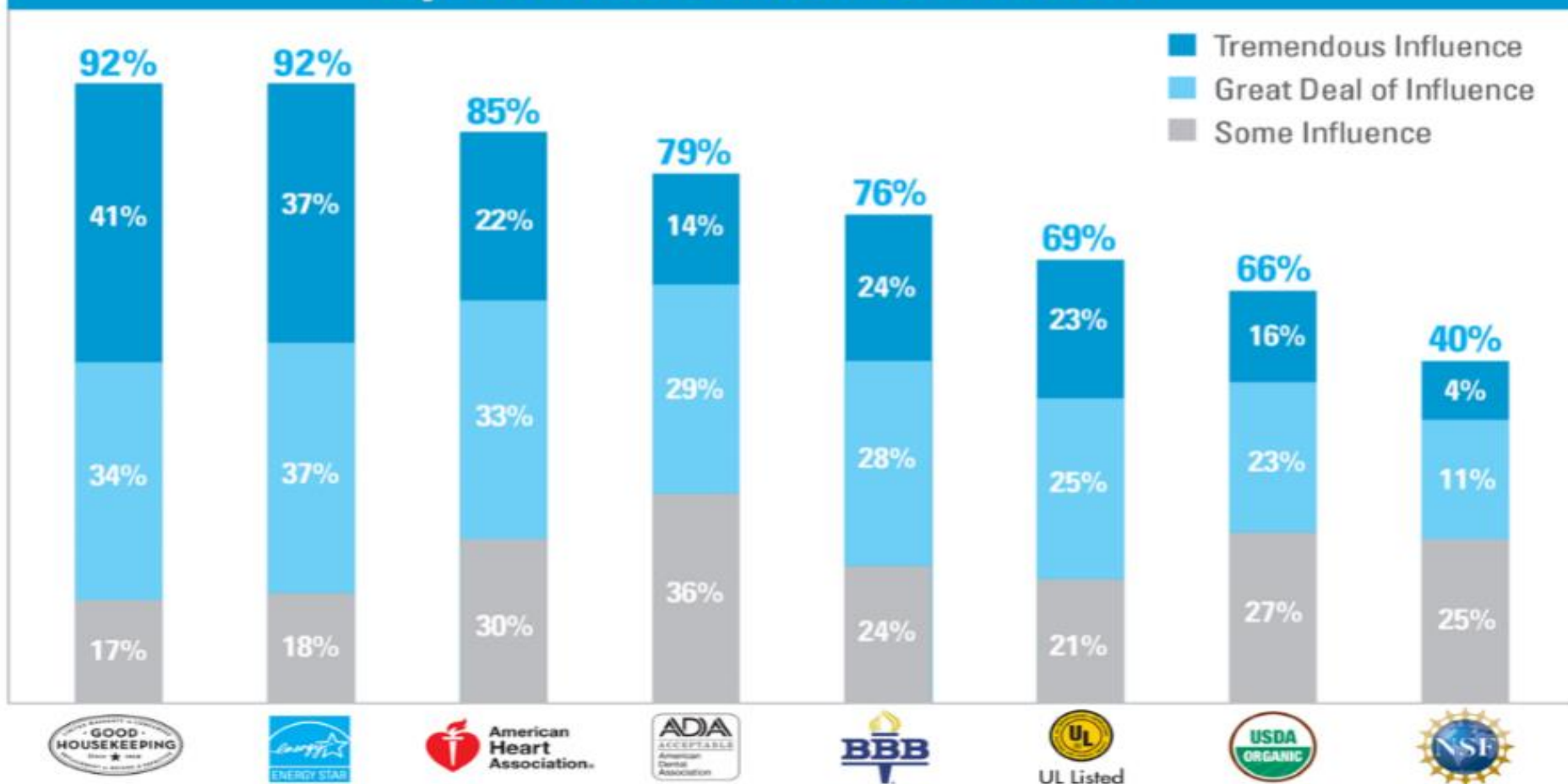
Importance of the ENERGY STAR Brand

88%

of households recognized the ENERGY
STAR label when shown the label.

Source: The Consortium for Energy Efficiency's report *National Awareness of ENERGY STAR for 2015*

Top-Ranked Consumer Emblem



Source: Fairfield Research, July 2011

Welcome New Partners!



Columbia
Gas
of Ohio



Conservation
Consultants,
Inc.



SOUTHERN CALIFORNIA
EDISON®

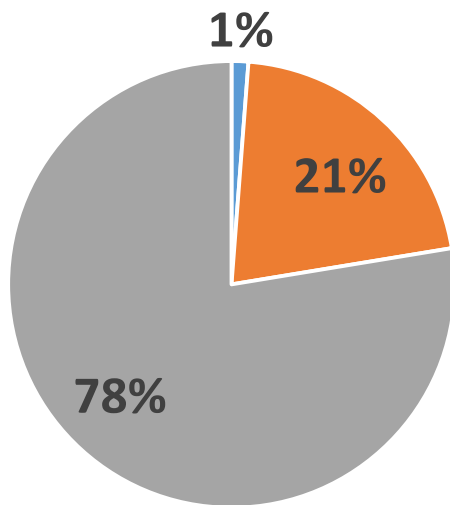
An *EDISON INTERNATIONAL*® Company



Black Hills Energy
Improving life with energy

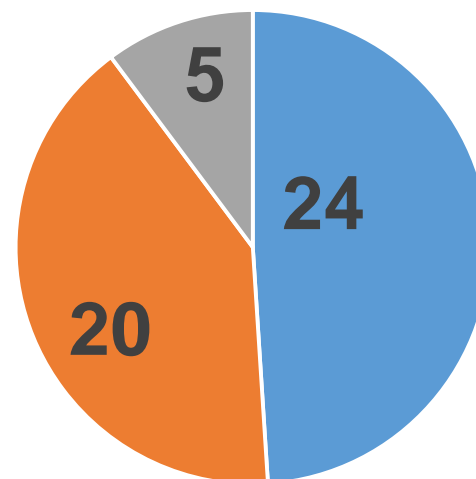
Sponsor Landscape

% of 2016 Projects Completed by
Sponsor Type



- Low Volume (<200 Projects)
- Mid-Volume (200-2,000 Projects)
- High-Volume (>10,000 Projects)

Number of Sponsors by 2016 Production
Volume

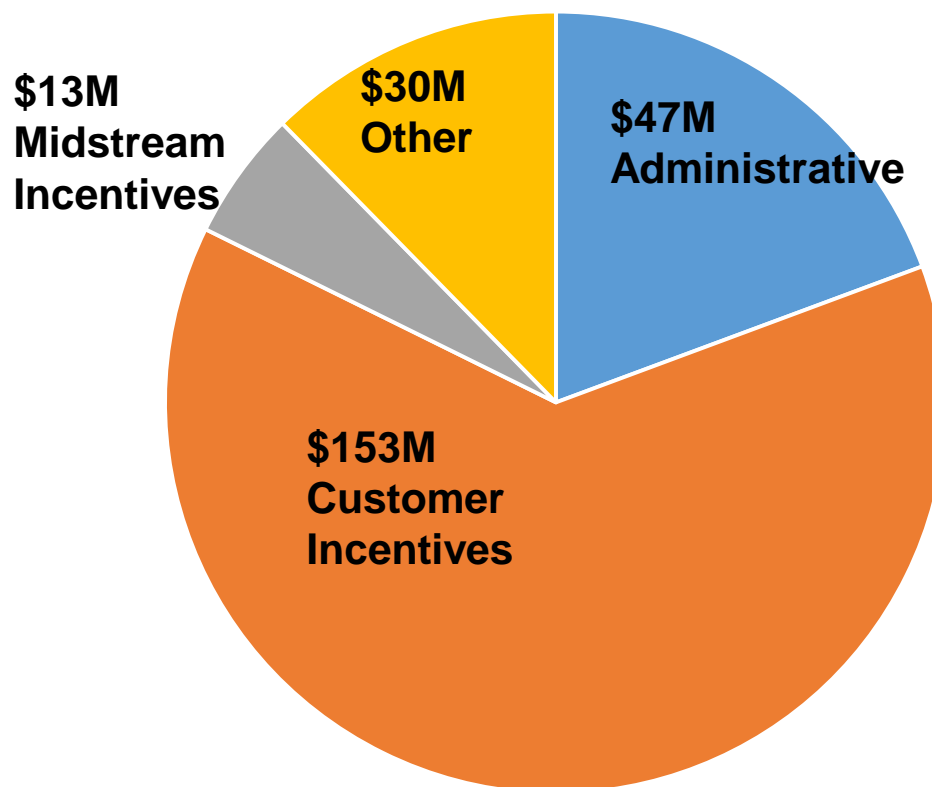


(Over 1,500 active participating contractors nationwide)

From the Annual Report: Spending*

Total Program Spending, by Budget Category

(Total = \$243M; n = 37)

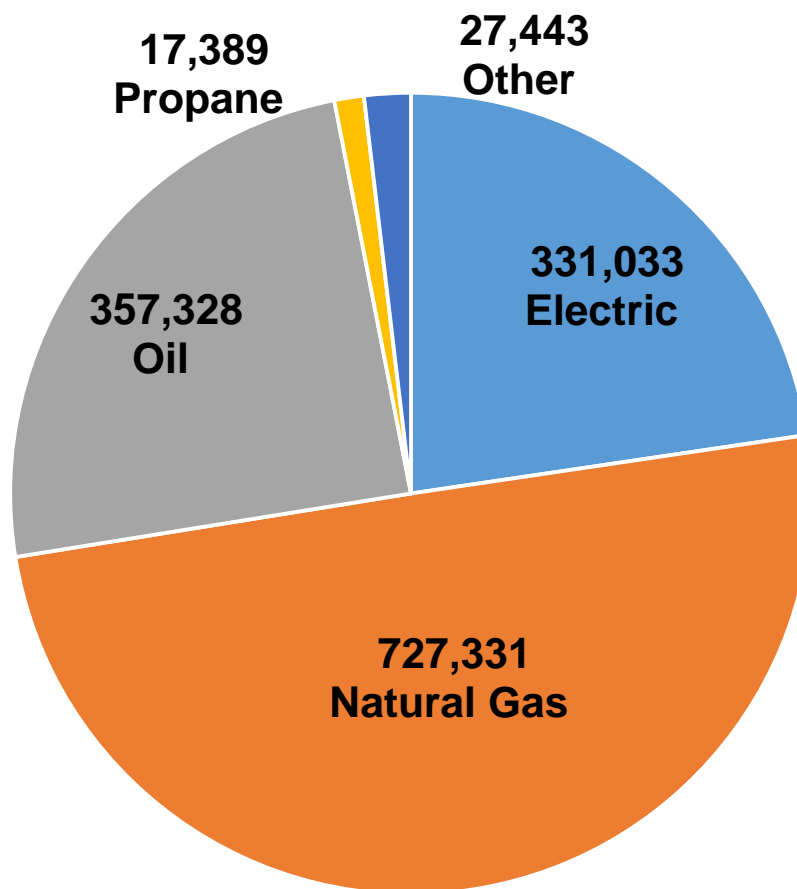


*Annual Report
Data will be
finalized in May

From the Annual Report: Savings*

Total Program Energy Savings by Fuel Type (MMBtu)

(Total = 1,460,542; n = 34)



*Annual Report Data
will be finalized in
May

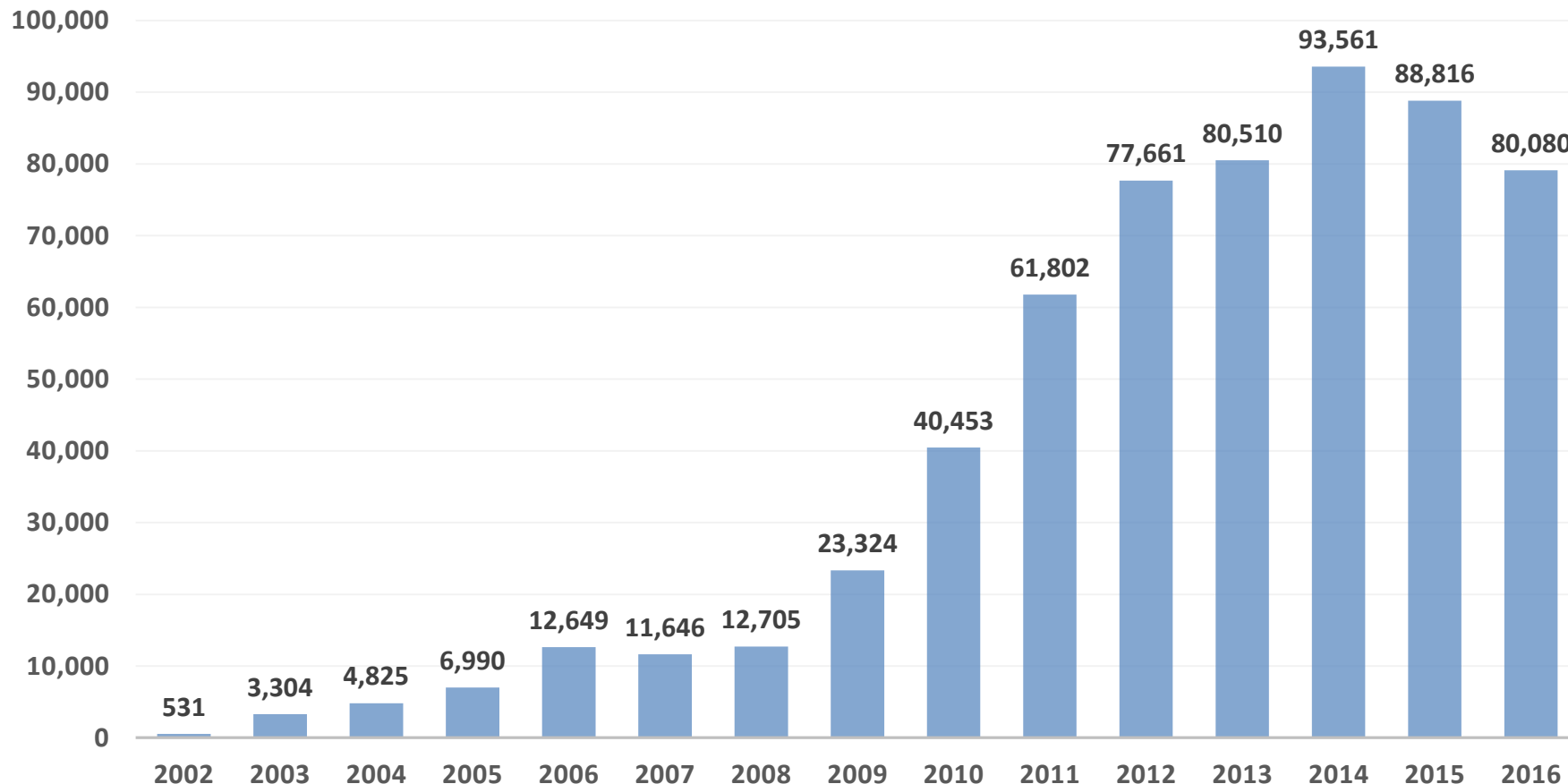
Areas of Growth*

- Increased commitment to marketing (16% of the average program's administrative budget, up from 12%*)
- 12 sponsors saw growth in 2016, with regional strength in the Mid-Atlantic, South and West
- More programs offering financing (19 in 2016, up from 16 the prior year)
- Notable activity in multifamily and income-targeted projects



**Annual Report Data will be finalized in May*

Projects Since 2002



Over 600,000 Projects Completed!

Challenges and Roadblocks

**Sustainable
Program
Funding**

**Cost
Effectiveness**

Weather

Energy Prices

**Contractor
Retention**

**Finding
Qualified
Employees**

**Lack of
Consumer
Awareness**

**Market
Saturation**

Why Ely's encouraged....



Strategies & Goals Overview



Our Strategies

Increase Partnerships

Expand Outreach and Marketing

Improve Operational Excellence



Our Objectives

Develop the Value Proposition

Increase Awareness of the Value Proposition

Enhance Stability and Certainty in the Market

Increase Partnerships	Develop Value Proposition	Increase Awareness of Value Proposition	Enhance Stability & Certainty
Recruit new program partners to increase the availability of HPwES to more homeowners		X	X
Demonstrate an Aggregator delivery model to prove a non-publicly funded delivery model for HPwES	X		X
Partner with HPC to deliver training for programs and contractors on business admin, marketing, and sales	X	X	X
Explore the use of an ENERGY STAR label for existing homes	X	X	
Facilitate and encourage outreach to State HFA's and other affordable sector partners	X	X	

Focusing on a variety of existing Sponsors

Want to hear more?
Join us at Boot
Scootin' Home
Performance with
ENERGY STAR
Tuesday 1:30-3:00

Increasing Access



Recruits ★

Pilots ★

Program Expansion ★

Marketing & Outreach	Develop Value Proposition	Increase Awareness of Value Proposition	Enhance Stability & Certainty
Distribute tools, resources, and marketing materials for program Sponsors and Contractors to communicate the value of HPwES		X	X
Enhance HPwES Website		X	
Increase Clarity on the Awards Process		X	X

Marketing & Outreach Enhancements

Website enhancements

- New sponsor search tool
- New graphics
- Simpler messaging
- **HPwES website averages 12,000 page views per month**

Consumer marketing

- Promotional flyers/factsheets
- Testimonials
- Glossary of home performance terms
- Videos/tips
- Updated program brochure
- Social Media

The Comfort You Deserve

Do you have:

- ☹️ Drafty or uncomfortable rooms?
- ☹️ Frequent sinus or respiratory problems?
- ☹️ Excessive dust or bugs?
- ☹️ Inordinate noise?

Problems like these could mean your home isn't working as it should.

Get more from your home with Home Performance with ENERGY STAR.

A qualified local expert will look at how the systems in your home can work together to provide:

- Fewer drafts and more comfortable rooms.
- A cleaner, healthier environment with fresher air.
- A quieter home.

Every project provides:

- A Home Performance Assessment
- A systematic improvement process
- Third-party quality assurance

Home Performance Assessment Checklist

- ✓ Homeowner Interview
- ✓ Energy Bills Review
- ✓ Home Evaluation
- ✓ Safety Check & Testing
- ✓ Home Improvement Recommendations

ENERGY STAR is the symbol for energy efficiency. It's a mark of excellence. It's a mark of trust. It's a mark of quality. It's a mark of leadership.

Quality Surroundings

Do you have:

- ☹️ Hot or cold rooms?
- ☹️ Ice dams on your roof in the winter?
- ☹️ Condensation on exterior walls or around windows?
- ☹️ "Crack" stains on walls, ceilings, or floors?

Problems like these could mean your home isn't working as it should.

Get more from your home with Home Performance with ENERGY STAR.

A qualified local expert will conduct a Home Performance Assessment including specifically looking at your home's "envelope" (walls, doors, windows, roof, and foundation) to:

- Measure air leakage
- Check insulation levels and window performance
- Evaluate your home's comfort, air quality, and energy efficiency
- Identify areas to be sealed and insulated

When it's time for an improvement, your qualified local expert will:

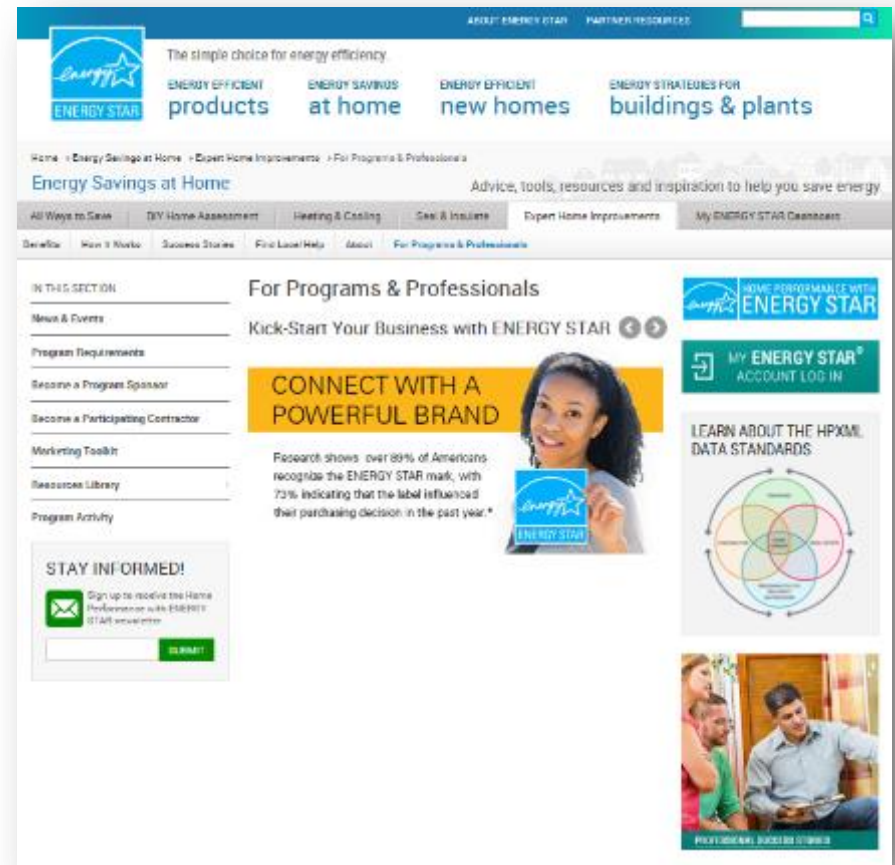
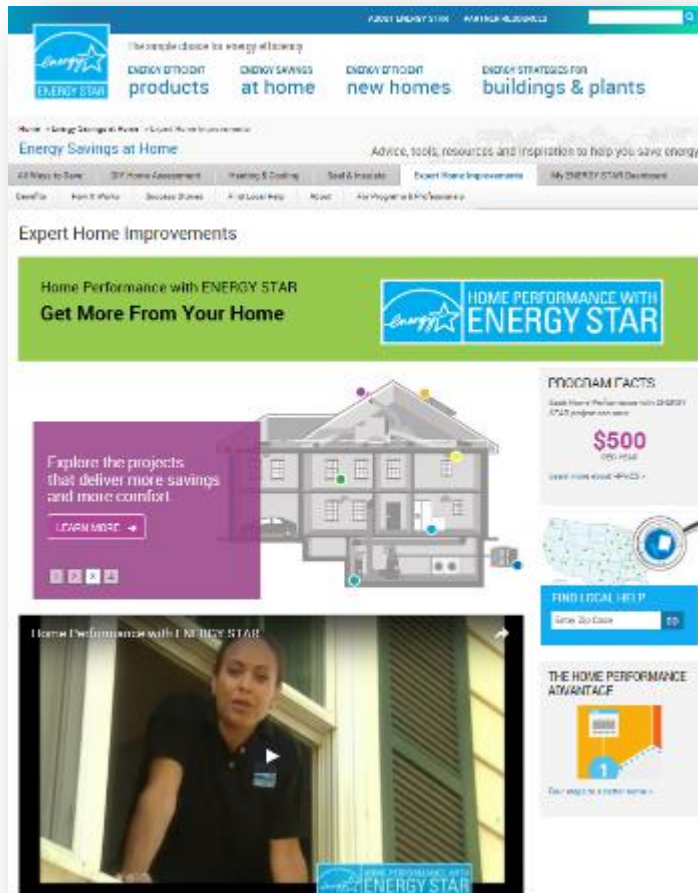
- Seal air leaks and add insulation where it is needed
- Replace failing windows and doors
- Ensure indoor air quality standards are met
- Address your comfort concerns
- Be backed by third-party quality assurance

Home Performance Assessment Checklist

- ✓ Homeowner Interview
- ✓ Energy Bills Review
- ✓ Home Evaluation
- ✓ Safety Check & Testing
- ✓ Home Improvement Recommendations

ENERGY STAR is the symbol for energy efficiency. It's a mark of excellence. It's a mark of trust. It's a mark of quality. It's a mark of leadership.

New Look Website!



www.energystar.gov/hpwes

Operational Excellence	Develop Value Proposition	Increase Awareness of Value Proposition	Enhance Stability & Certainty
Support local Pay for Performance and M&V 2.0 activities related to HPwES	x	x	x
Support HPC and the National Efficiency Screening Project to develop a new National Standard Practice Manual for Energy Efficiency	x	x	x
Support the development, expansion, and awareness of the HPXML data dictionary and transfer standard	x	x	
Identify data needed to track progress and develop a strategic plan to explore integration with Home Energy Score as a data reporting tool	x		x

Health and Home Performance Initiative

Identify and leverage the health benefits of home energy performance

Want to hear more?
Join us at What Do We
Really Know About the
Health Benefits of Energy
Upgrades?
Monday 10:30am -12pm

- Literature Review: Health Benefits of Energy Upgrades
 - Research on the health benefits of energy upgrades
 - ID research on the health benefits of energy upgrades
 - Learn more about the health benefits of energy upgrades
- Roadmap to Improve the Health Connection
 - HPwES roadmap for the health connection
 - Consumer marketing for the health connection
 - Email homehealth@eera.com to engage

High Performance Building Envelope Assemblies



Team and Partners	Topic Area
Home Innovation Research Labs, Inc. w/ ACC, NAHB, FPL, VSI, Dow, SIPA, APA, IBHS, DuPont	High Performance Moisture Managed Envelopes (2015)



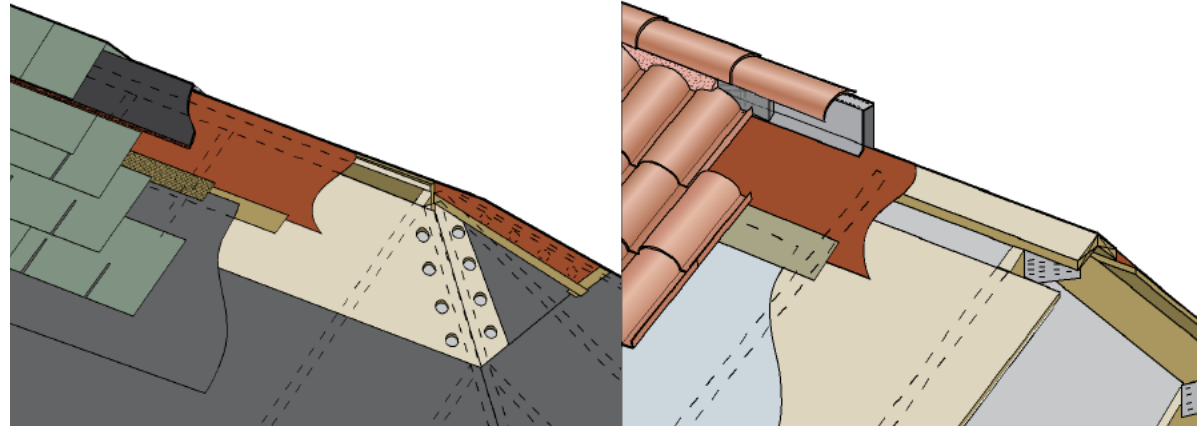
- **Moisture Performance of High-R Wall Systems:** Study moisture performance in high-R walls ($>R-20$) in 20 occupied high performance homes across different climate zones.
- **Extended Plate and Beam Wall System:** Study the constructability and structural/moisture performance of high-R walls with rigid foam insulation behind the WSP, in the pocket resulting from wall plates one dimension wider than studs.
- **Attic Retrofits Using Nail-Base Insulated Panels:** Study the constructability, energy and moisture performance of an innovative retrofit approach using nail-base insulated panels installed above the existing roof deck.

Success Metrics: Measured and modeled performance of high-R walls and design guidance for all climates. Efficient, durable wall assembly to meet and exceed new IECC targets. HVAC energy savings of 10% or more for sealed attics and cathedral ceilings.

Monitoring of Unvented Roofs with Diffusion Vents and Interior Vapor Control in a Cold Climate

Team and Partners	Topic Area
Building Science Corporation w/ DuPont, Owens Corning, Cosella-Dörken, K. Hovnanian Homes	High Performance Moisture Managed Envelopes (2016)

- Interior vapor control membrane on attics with fibrous insulation.
- Enables affordable insulation solution for attics, bringing the HVAC equipment into the conditioned space.
- New Construction Field Test
- Existing Manufactured Housing Field Test/ Demonstration
- Up to 3 winters of data

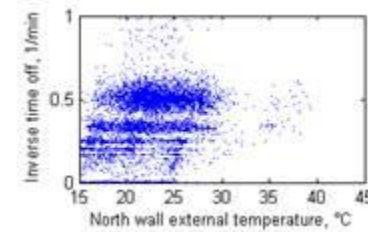
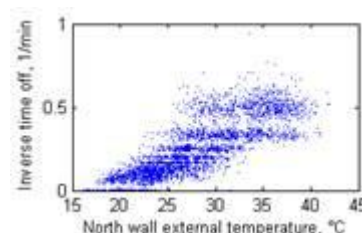


Success Metrics: Assessment & validation of unvented roof construction detail to enable moisture managed fibrous insulation solutions in cold climates, achieving code & above code performance (R-49) at up to 80% material cost reduction, and saving >10% in HVAC energy use.

Physics-based Interval Data Models to Automate and Scale Home Energy Performance Evaluations

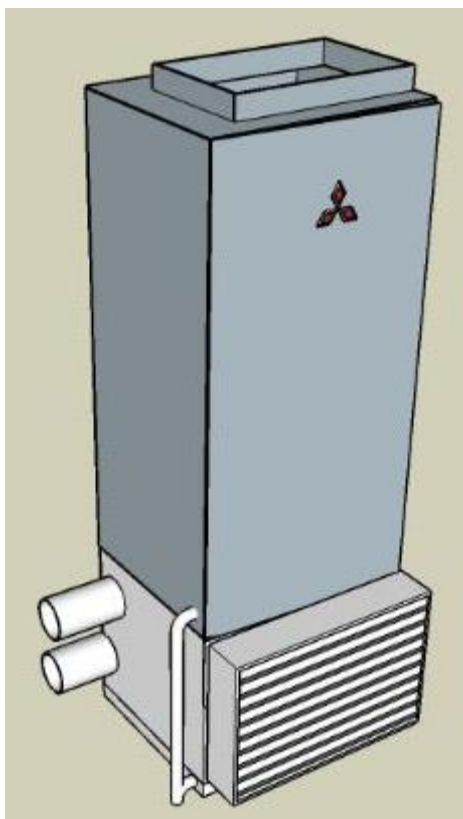
Team and Partners	Topic Area
Fraunhofer USA, Inc. w/ Eversource, National Grid, Holyoke Gas & Electric	Performance Measurement (2016)

Develop a highly scalable tool that automatically and remotely analyzes communicating thermostat (CT) and interval meter data to identify household-specific retrofit opportunities to reduce heating energy consumption, quantify expected retrofit energy savings, and validate post-retrofit energy performance.



Success Metrics: Develop & validate approach that correctly identifies households with the target retrofit opportunities with 1) at least 75% classification accuracy and 2) +/-25% accuracy in predicting retrofit energy savings, to significantly increase the uptake of the target retrofit measures while reducing program recruitment costs per retrofit project. Success metrics include doubling the rate of onsite energy audits in partner utility programs for the target households identified by the tool.

Team and Partners	Topic Area
Steven Winter Associates, Inc. w/ Mitsubishi	Optimal Comfort Systems and Optimal Ventilation & IAQ Solutions (2016)



- Development of integrated ERV and heat pump
- Variable speed fans for low energy and high controllability
- Test and demonstrate in unoccupied and occupied homes
- Lower cost and higher performance than typical practice of Central Fan Integrated Supply (CFIS) ventilation

Success Metrics: Develop, validate, & demonstrate VICS, to reduce up-front cost \$1,000-\$2,000 and save 400-800 kWh/year, compared to separately installed standard ducted ventilation & HAC systems. Enables balanced ventilation, better IAQ, & RH control in tight homes at lower cost.

Team and Partners	Topic Area
<p>Southface Energy Institute w/ Underwriters Laboratory, Beazer Homes, Illinois Sustainable Technology Center, Venmar, Kerley Family Homes</p>	<p>Optimal Ventilation & IAQ Solutions (2016)</p>

- Develop assessment protocol incorporating low-cost IAQ sensors: PM_{2.5}, CO₂, O₃, formaldehyde, and radon sensors
- Benchmark IAQ metrics in new and existing homes
- Smart ERV field tests in real-world homes to evaluate impact on IAQ and energy consumption
- Pilot LBNL-developed IAQ Score in test homes



Success Metrics: Develop & validate a performance-based protocol for assessing indoor air quality (IAQ) in homes and inexpensive smart ERV solution that can achieve average annual HVAC energy cost savings of approximately \$100 compared to central fan integrated supply systems, and ~50% reduction of ventilation related latent loads compared to supply or exhaust strategies. Goal is to overcome builder reluctance to airtightness & ventilation strategies, to enable energy savings from tight construction in hot/humid climates, while reducing IAQ risks and improving comfort.

Team and Partners	Topic Area
Newport Partners w/ Broan-NuTone	Optimal Ventilation & IAQ Solutions (2016)

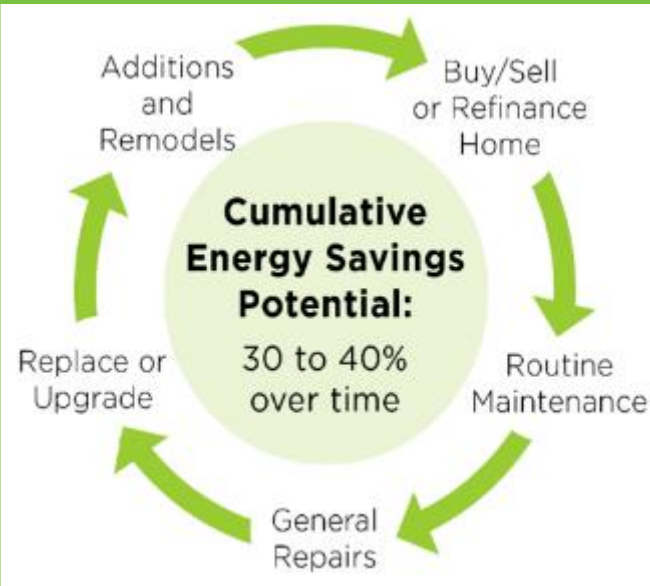
- Kitchens are the primary source of the most harmful pollutants generated in the home.
- Kitchen range hoods are seldom used and can be ineffective.
- Develop a Smart Range Hood that senses pollutants, with automatic operation.
- Improve residential IAQ, extend lives, and save billions of dollars in health-related costs annually.

Success Metrics: “Smart” range hood developed & validated that is very quiet (≤ 1 sone), up to 5 times more efficient than ENERGY STAR, and near 100% capture efficiency, at a target price point competitive with the intermediate market. Enables tighter homes, ZERH specs, & better IAQ by addressing major indoor pollutant source.



Home Improvement Catalyst (HI Cat)

Home Ownership Lifecycle



HI Cat Focus: Identifying and prioritizing activities where DOE can have the greatest impact in accelerating adoption of energy efficient technologies and practices at key home improvement transactions.

Contact: Steve Dunn, DOE Project Manager

e-mail: steve.dunn@ee.doe.gov



Scoot on over to join us this week...

Tues -- 7:15 am Roundtable: Making HVAC Quality Installation Achievable

Tues -- 10:30 am Session: Solving the Challenges of Retrofits

Wed -- 10:30 am Session: The Impact Driven Value Proposition Challenge



Indoor airPLUS program

Aaron S. Johnson, QAD

Indoor airPLUS / Healthy Home Performance
Indoor Environments Division
U.S. Environmental Protection Agency



Home Performance with ENERGY STAR Sponsor Panel



Value Proposition: TEE it off for the Sponsor Panel!



Development of the “Value Proposition” for Stakeholders

- Cost Effectiveness
- Pay for Performance
- Engagement with other industries

Increasing Awareness of the “Value Proposition”

- Marketing materials and User Group
- Home Energy Score

Dealing with Market Uncertainty

- Contractor Training
- Selling in uncertain markets
- Structuring businesses to be resilient

John White
Senior Manager
ICF International





EmPOWER MARYLAND



BGE, Pepco, Delmarva Power, SMECO

March 19, 2017

DOE Sponsor Meeting

John F. White



ICF

Data, Insights, and Deep Implementation Expertise

ICF – WE MAKE BIG THINGS POSSIBLE



Energy



Health



6,500+
EMPLOYEES



Environment



1 BILLION+
IN REVENUES



Transportation

NATIONWIDE DSM IMPLEMENTATION



150

*Energy
Efficiency
Programs*



50

*Clients
Across North
America*



15

*Large
Portfolios*

WITH INTEGRATED, IN-HOUSE

Customer Service + IT Backbone + Award-winning Marketing

Performance Based Incentives

Incentive Structure

- Incentives up to \$7,500 (capped at 75% of cost)

Calculated Lifetime MMBtu Savings

- Calculated through Beacon HEA
 - Annual savings for eligible measures multiplied by measure life then converted to MMBtu
- Floating range of incentives
 - Electricity Savings (\$12-\$20) per lifetime electric MMBtu (293.071 kWh per MMBtu)
 - Natural Gas Savings (\$1-\$3) per lifetime natural gas MMBtu (10 therms per MMBtu)
 - Nat. Gas incentives offered across all utilities on shell measures
 - Nat. Gas incentives on furnaces only offered through BGE
- Starting incentive levels
 - \$18 per electric MMBtu & \$3 per natural gas MMBtu
- Prescriptive rebates:
 - Duct sealing – guaranteed minimum rebate
 - HVAC replacements – coupled with shell improvements
- HVAC early retirement
 - Performance-based (with qualifications)

Performance Based Incentives

- For more, come to our session:

Comprehensive Home Performance with ENERGY STAR®:

Motivating your Customers & Contractors

Wednesday, March 22, 2017 at 8:30AM

Music Row 2 (level two)



Leveraging a Strong Trade Ally Network

- **60 Trade Allies participate in the HPwES programs in Maryland**

- Sign Contractor Participation Agreement
 - Maintain state licensing
 - Hold insurance
 - BPI certified
- Trade Allies assigned an Account Manager
 - Provide guidance on program requirements
 - Provide support for rebate application submissions
 - Provide training and onboarding
 - Conduct quarterly meetings to review program results and changes
- Trade Ally engagement and support
 - Regular stakeholder meetings
 - Participating contractor logo
 - Program marketing drives customers to the find a contractor page
 - Focus groups



Thank you

John F. White

John.White@icf.com

443-718-4864



Elizabeth Murphy

Senior Program Administrator
United Illuminating Company



Empowering you to make
smart energy choices



Building Value through HPwES in Connecticut

Elizabeth Murphy
March 19, 2017



Energize Connecticut

- Statewide initiative which helps consumers reduce their energy bills, save money, and reduce their carbon footprint
- A partnership of the Energy Efficiency Fund, the Connecticut Green Bank, Department of Energy and Environmental Protection (“DEEP”) and local electric and gas utilities
- Funded by a charge on customer electric and natural gas bills

Home Energy Solutions (HES)

- HPwES program offering direct-install energy efficiency products and services for single family (1-4 units) homes
- Comprehensive energy assessment for low co-pay
- BPI certified HES lead technician addresses all energy-saving opportunities and qualifies home for add-on measure rebates
- Financing options provided to make add-on measures affordable

Low Income and Multifamily Programs

- HES – Income Eligible is Connecticut’s low income HPwES program
 - Offers same services as HES, but at no cost to qualifying residents
 - Partners with WAP to maximize reach of WAP funding
- Multifamily initiative offers comprehensive energy improvement services and customized incentives to 5+ unit properties
 - Incorporating HPwES brand in 2017

Building Value through HPwES

- Value Proposition
 - Customer education
 - Integration of DOE Home Energy Score
- Increasing Awareness
 - Low income and multifamily customers
 - Real estate community
 - Solar industry
- Market Uncertainty
 - Enhanced marketing efforts
 - Robust technician training

Value Proposition

- Customer education
 - Detailed customer report offering recommendations based on home's energy usage
- Integration of DOE Home Energy Score
 - Connecticut became first statewide implementer in April 2015
 - Over 18,000 scores generated to date!
 - Leverage score to encourage sellers to make energy improvements prior to selling
 - Showcase ability to compare homes when buying

Increasing Awareness

- HES – Income Eligible
 - Incorporated HPwES brand in 2016
 - Goal of offering Home Energy Score in 2018, working towards solutions for challenges:
 - Development of mobile data collection tool
 - Ensuring HES-IE lead techs are qualified Assessors
 - Renter-occupied properties → ensuring communication with decision-maker (i.e., landlord)
 - Limited customer resources to invest in recommended upgrades
- Multifamily – incorporating HPwES brand in 2017

Increasing Awareness

- Engagement with real estate community
 - Educate realtors to understand value of energy efficiency
 - Collaborate with realtors to generate leads and leverage Home Energy Score
- Engagement with solar industry
 - 2017 Coffee and... matchmaking events designed to integrate home performance and solar
 - Home Energy Score as an option for homeowners to meet energy audit requirement for solar incentives and financing

Market Uncertainty

- Enhanced marketing efforts
 - Multiple touch points
 - Custom Resource Center – customizable marketing collateral
- Robust technician training
 - Detailed field manual containing talking points to facilitate customer interaction
 - Sales and technical training





Empowering you to make
smart energy choices

**For more info on Connecticut's
program visit:**

EnergizeCT.com/HES

EnergizeCT.com/DOEHomeEnergyScore

Scott Bloedorn

Project Manager - Residential Programs

Focus on Energy



focus on energysm

Partnering with Wisconsin utilities



focus on energysm

Partnering with Wisconsin utilities

Focus on Energy - Home performance with ENERGY STAR[®]

Scott Bloedorn

Home Performance Project Manager

..... Saving Energy and Money For Wisconsin




About Focus on Energy

- Focus on Energy is Wisconsin utilities' statewide energy efficiency and renewable resource program.
- We represent 108 utilities.
- We recently celebrated our 15 year anniversary.
- Over 2,500 contractors have participated in our residential programs since 2012.

Home Performance Program

CHOOSE YOUR PATH

\$250 BONUS when you complete Whole Home Improvements and Heating and Cooling Improvements together
Tier 1 only. Must be completed within 90 days of each other.

	Whole Home Improvements	Heating & Cooling Improvements	Renewable Energy
			
Program details	Energy assessment Customized report Air sealing and insulation	Heating and cooling equipment Smart thermostats	Solar electric systems — Geothermal systems Renewable energy loans
Customer Investment	\$\$\$	\$\$\$	\$\$\$
Customer Incentives	\$\$\$	\$\$\$	\$\$\$
Description	The perfect starting point for ultimate home comfort and highest savings.	Not quite ready for the full home treatment? You can still save on heating and cooling improvements.	Reach next-level savings by producing your own renewable energy.

Larger incentives for Whole Home and Heating and Cooling Improvements are available for income-qualified homeowners.

HVAC Contractor Integration

HOME PERFORMANCE PROGRAM

HOME COMFORT ADVISOR PROGRAM

EXCLUSIVE OPPORTUNITY TO
BOOST YOUR BUSINESS

.....

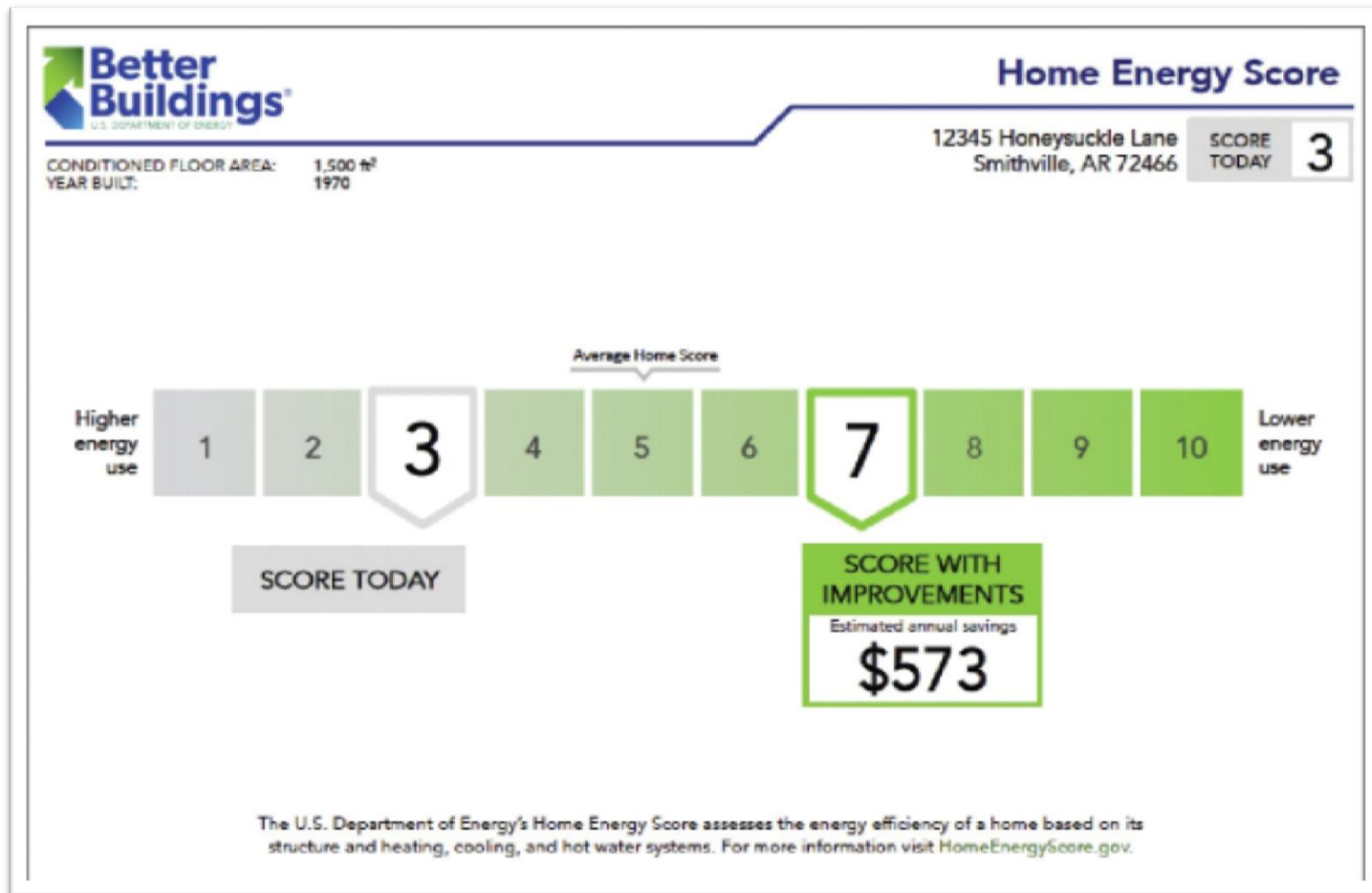
Home Performance with ENERGY STAR®, administered nationally by the U.S. Department of Energy in conjunction with the U.S. Environmental Protection Agency, offers a comprehensive, whole-home approach to helping homeowners improve the comfort and energy efficiency of their homes. Contractors offering Home Performance with ENERGY STAR services are equipped with specialized training and tools to help determine how their customers' homes are wasting energy and causing comfort issues.

More than 22,000 Wisconsin homeowners are already enjoying more comfortable, energy-efficient homes thanks to Focus on Energy's Home Performance Program, but thousands more could still benefit.

To help address this, Focus on Energy is excited to offer the **Home Comfort Advisor Program** to a select group of HVAC Trade Allies



Home Energy Score



Energy Efficient Mortgage Pilot



OPEN THE DOOR FOR YOUR CLIENTS WITH AN FHA ENERGY EFFICIENT MORTGAGE

Ready to share some exciting news with your clients?

Your clients want a home they can afford to buy, maintain, and live in.

CLIENT BENEFITS:

- Low interest rates
- Up to \$1,000 back at closing

Customer Segmentation Study

The Golden Year Patriots



Middle Class Melting Pot



The Prosperous



Young Homeowners



Marketing



A/B testing showed a 64% increase in click through rates when banner ads contained the HPwES logo.

Contact Info



Scott Bloedorn

scott.bloedorn@focusonenergy.com

Sherry McCormack

Energy Efficiency & Consumer Programs Coordinator
Southwestern Electric Power Company (SWEPCO)



An **AEP** Company

BOUNDLESS ENERGYSM



An AEP Company

BOUNDLESS ENERGY™

Home Performance with ENERGY STAR® Partner Meeting

Incorporating Multifamily Properties
while creating a Joint Utility
Partnership

BOUNDLESS ENERGYSM

Multifamily in HPwES

- Multifamily accounted for 35% of total kWh savings
- Additional 989 units for contractors with less associated overhead
- Training tool
 - On-site mentoring
 - Ability to “practice” by completing 3-5 units/day
- Helps customer segment having little control over utility bills

Arkansas Partnership SWEPCO & Black Hills Energy

- Common application process
- Unified contractor base
- Unified implementation team
 - Joint Contractor Trainings & Kick-off Meetings
 - QA approach and teamed for field mentoring
- Average incentive costs split 50/50
- Joint Quarterly Report to DOE!!



An AEP Company

BOUNDLESS ENERGY™

Sherry McCormack AEP SWEPCO

slmccormack@aep.com

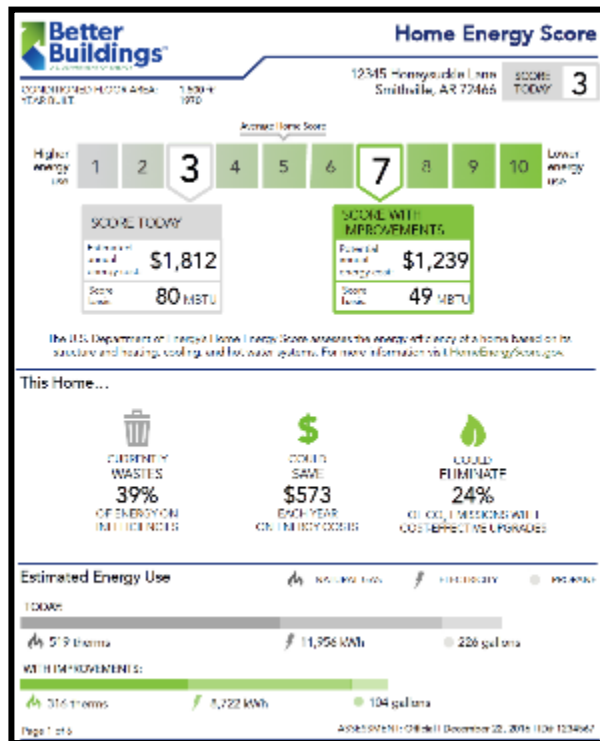
479.973.2404

BOUNDLESS ENERGYSM

Take a
Break

STRETCH

Using Home Energy Score to promote HPwES, Weatherization, and more



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Integrating Home Energy Score and Home Performance with ENERGY STAR

Home Energy Score can be used with HPwES

Can help meet some of the HPwES Minimum Requirements

Homeowner Report with a list of recommended improvements

Wholehouse Evaluation

Perfect for Single measure incremental upgrade oriented program models

No Cost to Use HEScore

HEScore is easy to use - evaluations can typically be completed in less than an hour

Just need to add Health and Safety and Diagnostics when Needed





Using Home Energy Score to Promote HPwES, Weatherization, and More

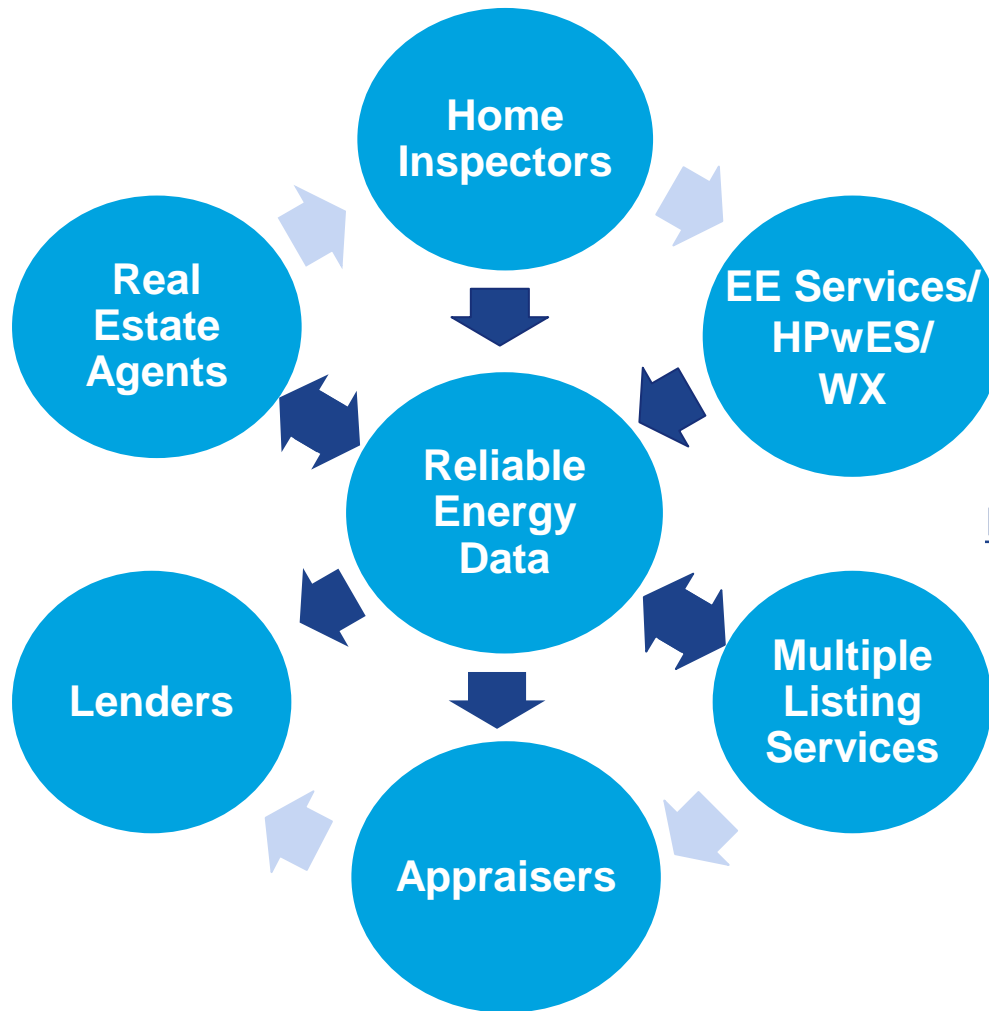


Joan Glickman
March 19, 2017

Why Is Residential Labeling Important?

Labels make the invisible, visible.

Home Sellers
want to get credit
for their investments in
energy efficient
equipment and
other features



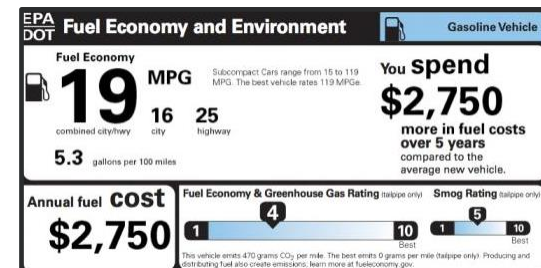
Home Buyers
want to know what they're
buying and be
able to predict
monthly expenses
(e.g., utility costs)

Labels can help capture the value of EE at time of sale.

DOE's Home Energy Score: What Is It?

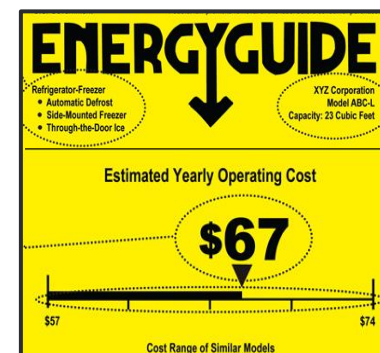
► A “miles-per-gallon” rating for single family homes

- ✓ Standardized U.S. Department of Energy (DOE) rating
- ✓ Provides estimated energy use for the home, given standard conditions.



► Reliable and easy to understand

- ✓ Tells consumer how much energy the home is expected to use
- ✓ Gives visibility to home's “hidden” value
- ✓ Provides an “actionable” list of cost-effective recommendations to improve a home's energy performance and comfort



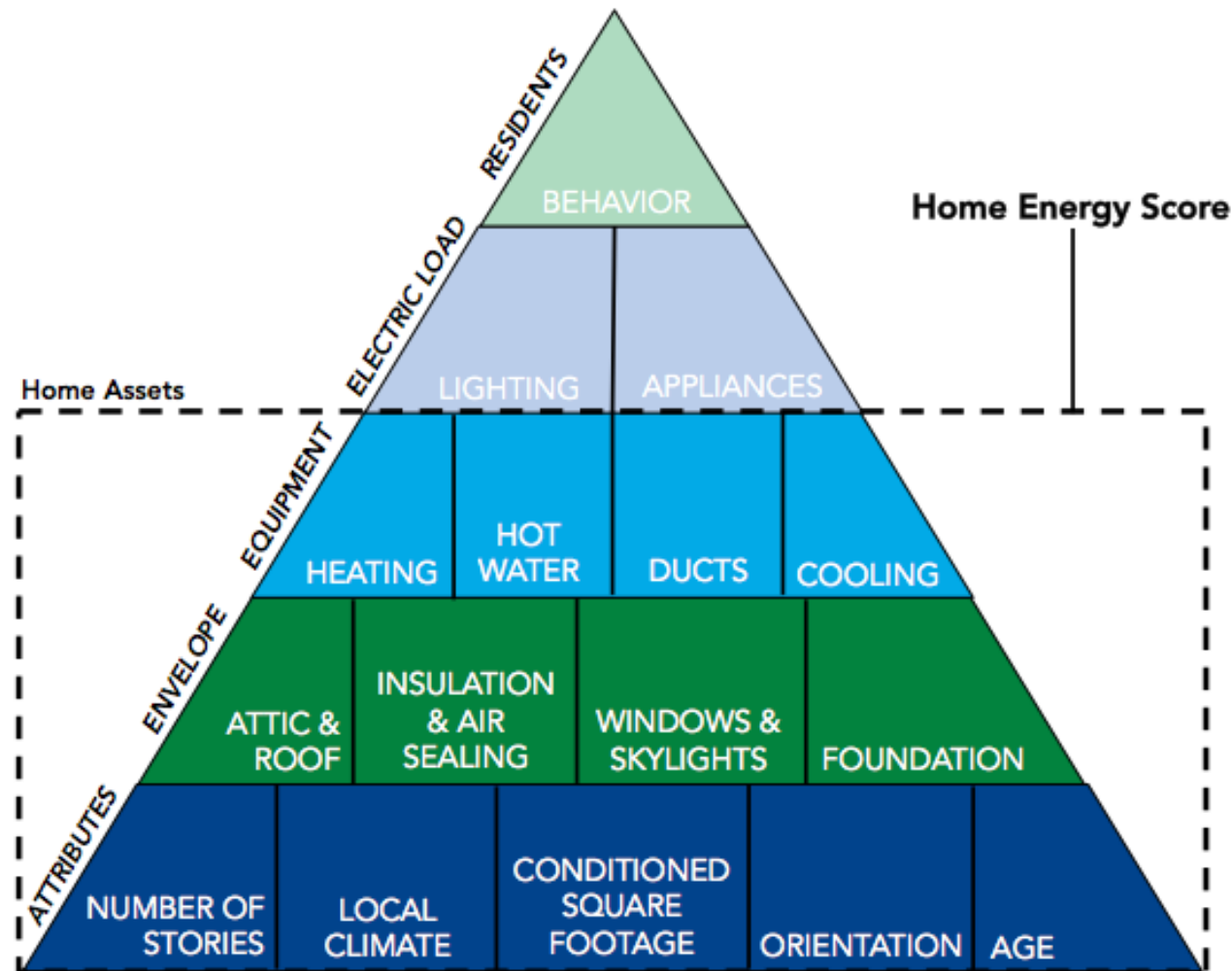
► Generated using a DOE energy modeling tool

- ✓ Data must be collected in a qualified assessor during an in-home assessment
- ✓ Free online training and test

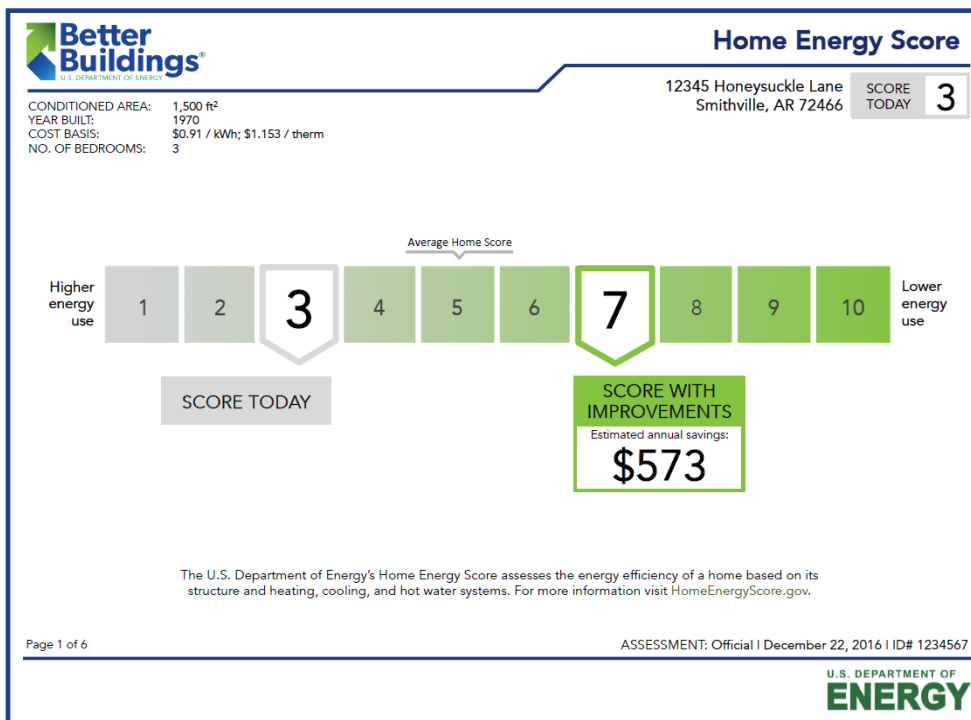


What Data and Information Comprise a Home Energy Score?

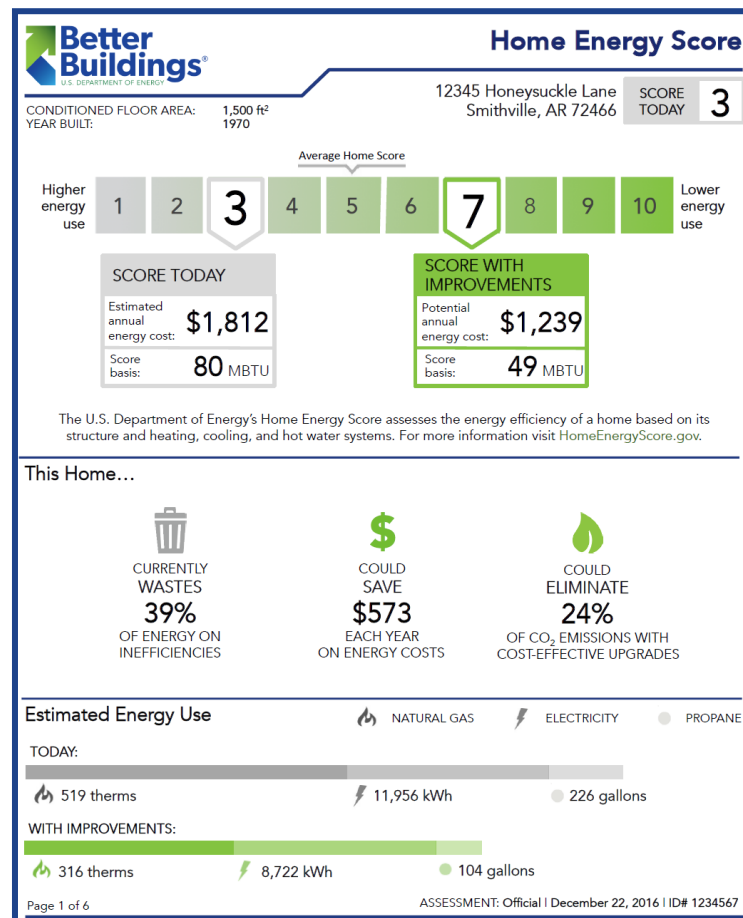
- Home Energy Score is **based on a home's assets that affect energy use**
- Assets reflect those parts of the property that typically convey at time of sale
- **The Scoring Tool applies standard assumptions about occupant behavior and local weather** to allow “apples to apples” comparison between homes



The (Customizable) Home Energy Score Report Part 1: The Score



- Can be generated by contractors, home inspectors, utilities, others
- No reporting requirements
- All automated



- Takes an hour or less to complete
- Free, on-line tool can be used directly or linked to other software tools via API

Part 2: Home Facts

This section of the Report provides all of the data inputs collected by the Assessor as well as the estimates generated by the Home Energy Scoring Tool.



Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE
TODAY **3**

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at HomeEnergyScore.gov.

About This Home

ASSESSMENT

Type Official
Assessor ID #1234567
Scoring tool version v2016
Date December 22, 2016

HOME CONSTRUCTION

Year built 1970
Number of bedrooms 3
Stories above ground level 1
Interior floor-to-ceiling height 10
Conditioned floor area (ft²) 1,500
Direction faced by front of house North
Air sealed? No
Air leakage rate 6,500 CFM50

Estimated Annual Energy Use

ENERGY BY TYPE

Total (MBtus) 204
Score basis (MBtus) 141
Electricity (kWh) 11,956
Natural gas (therms) 519
Propane (gallons) 226

COST BASIS

Electricity \$0.091 / kWh
Natural gas \$1.153 / therms
Propane \$2.171 / gallon
Energy cost per square foot \$1.45 / ft²

DEFINITIONS & CONVERSIONS

MBtu Million British thermal units; generic energy unit
kWh Kilowatt-hour; electricity unit
Therm 100,000 Btu; heat energy unit
Electricity conversion 1 MBtu = 293 kWh
Heat conversion 1 MBtu = 10 therms

Systems

HVAC SYSTEM 1

Percent conditioned area served 33%
Heating type Electric heat pump
Heating efficiency value 7.8 HSPF
Cooling type Electric heat pump
Cooling efficiency value 12 SEER

DUCT SYSTEM 1

Unconditioned attic INSULATED? Yes SEALED? No

HVAC SYSTEM 2

Percent conditioned area served 67%
Heating type Central gas furnace
Heating installation year 2009
Cooling type Central air conditioning
Cooling installation year 2009

DUCT SYSTEM 2

Unconditioned basement INSULATED? No
Unconditioned attic No
Conditioned space No

HOT WATER

System type LPG storage
Installation year 1997

Foundation

FOUNDATION / FLOOR 1

Floor area (ft²) 500
Foundation type Slab-on-grade foundation
Foundation walls insulation R-0

FOUNDATION / FLOOR 2

Floor area (ft²) 1,000
Foundation type Unconditioned basement
Floor insulation above foundation R-0
Foundation walls insulation R-0

Walls

WALL CONSTRUCTION

	TYPE / EXTERIOR FINISH	INSULATION VALUE
Front	Wood frame with Optimum Value Engineering (OVE) / Brick Veneer	R-19
Back	Wood frame / Wood, Asbestos, Fiber Cement, Shingle, or Masonite	R-0
Right	Concrete block or stone / Stucco	R-3
Left	Wood frame with rigid foam sheathing / aluminum siding	R-3

Windows & Skylights

WINDOW AREA

Front (ft²) 70
Back (ft²) 90
Right (ft²) 40
Left (ft²) 30

WINDOW CONSTRUCTION

	PANES	FRAME	GLAZING or U-VALUE & SHGC
Front	Single	Aluminum	Clear
Back	Double	Wood or Vinyl	Solar-controlled low-E
Right	Double	Aluminum w/ thermal break	Insulating low-E, argon gas fill
Left	Triple	Wood or vinyl	Insulating low-E, argon gas fill

SKYLIGHTS ROOF / ATTIC 1

Present? Yes
Area (ft²) 30
Type Single Aluminum Tinted



Part 3: Recommendations

Recommended Improvements

REPAIR NOW. These improvements will save you money, conserve energy, and improve your comfort.

- ▶ **Air Tightness:** Have a professional seal all the gaps and cracks that leak air to save **\$110** / year
- ▶ **Ducts 1:** Add insulation around ducts in unconditioned spaces to at least R-6 to save **\$43** / year
- ▶ **Attic 2:** Increase attic floor insulation to at least R-19 to save **\$57** / year
- ▶ **Ducts 2:** Add insulation around ducts in unconditioned spaces to at least R-6 to save **\$23** / year
- ▶ **Ducts 2:** Have a professional seal all the gaps and cracks that leak air to save **\$74** / year

REPLACE LATER. These improvements will help you save energy when it's time to replace or upgrade.

- ▶ **Windows:** Choose ones with an ENERGY STAR label to save **\$61** / year
- ▶ **Water Heater:** Choose an ENERGY STAR appliance to save **\$159** / year
- ▶ **Electric Heat Pump:** Choose an ENERGY STAR appliance to save **\$32** / year

Comments

Current local incentives may make this house a good candidate for a new water heater.

- Recommendations categorized as “Repair now” and “Replace later”; based on cost-effectiveness using state average utility rates
- Some Partners and Assessors provide their own **custom recommendations**
- Tool can generate “Upgrade Score” based on custom recommendations

Implementation Highlights: Making It Easy, Making It Matter

- ✓ ~60,000 homes scored since 2012
- ✓ ~450 Assessors
- ✓ **State and local adoption**
 - AL, AR, CO, CT, MO, NH, OR, VT; others considering (e.g. MA, NY, RI, WI)
 - Berkeley, CA and Portland, OR require Score at time of sale or listing



- ✓ **8 software platforms** link to DOE's latest Tool via an application programming interface (API)
 - No need for double entry of data
 - Cake Systems, EnergySavvy, Enhabit, Home Inspector Pro, Inspection Depot, Optimizer, Snugg Pro, United Illuminating
- ✓ **Free streamlined 3D simulation training and testing for Assessors**; update released January 2017
- ✓ Linking **realtors**, home inspectors & efficiency programs through **DOE's Home Energy Information Accelerator**
- ✓ **Financing** opportunities, incentives

Why Should You Consider Integrating the Score into Your Programs?

For many, the Score is an easy and logical add-on.

- ✓ Satisfies a number of **HPwES/WX requirements**
- ✓ Serves as a **whole-home assessment** and **evaluation tool**
 - It runs a full energy simulation of the home using a DOE approved engine
 - While diagnostics are not required to generate a Score, the Tool accepts CFM50 data if a blower door test is conducted
- ✓ Generates a **standard report**
 - Includes a number of different metrics and a list of cost-effective recommendations for efficiency improvements
 - It's customizable, including the ability to rescore the home with program specific asset-related efficiency recommendations
- ✓ Provides **free training and testing** for Assessors
- ✓ Provides **an easy interface for programs to track and download data**
 - Partners can pull all inputs as well as Tool outputs for homes scored by their Assessors
- ✓ Appropriate for **single measure** or **whole home upgrade** programs

The Opportunity for Integration!

- ❖ **Lead Generation:** Broaden the HPwES market by leveraging interest at point of purchase
- ❖ **Enhance Appeal of EE:** Use the Score to demonstrate to customers the potential to recover costs at point of sale
- ❖ **Before and After:** The Score is usually offered at the audit phase and at the conclusion of the HPwES project
- ❖ **Minimal Additional Effort:** With an API-compliant software, it typically adds only a few minutes to the audit
- ❖ **Valuing EE:** Because of the Score's simplicity and credibility, it enables valuing EE investment by homeowners and buyers.
- ❖ **Differentiation:** Leading HPwES contractors are incorporating the Score to further differentiate their offerings.

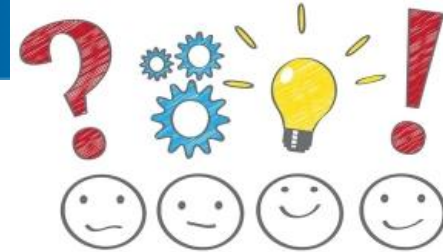


*Weatherization
Works*

Our Partners

We owe it all to them!

We Want to Hear From YOU!



Questions?

Contact us at HomeEnergyScore@ee.doe.gov

Check us out on the web at www.HomeEnergyScore.gov

Even More Questions?

Join us at these sessions:

- ***“A Review of Exciting Efforts to Scale up Residential Energy Labels.”*** Monday 1:30 - 3 pm.
Hear how **States** are implementing the Score.
- ***“Looking Beyond Traditional Incentives to Spark Consumer Demand.”*** Monday 3:30 - 5 pm.
Hear why **Contractors** are using the Score.
- ***“Who's Keeping Score? Using Home Performance with ENERGY STAR and Home Energy Score Together.”*** Tuesday 8:30 - 10 am.

Join us for an informal dinner*
on Tuesday at 6:30 pm

Martin's Bar-B-Que Joint
410 4th Ave S



***Dutch Treat**

How to work in both Weatherization and Home Performance?

David Rinebolt

Weatherization Assistance Program

U.S. Department of Energy



Home Performance with ENERGY STAR Contractor Panel



Panelist

Larry Zarker (*Moderator*)

Executive Director

Building Performance Institute



Building
Performance
Institute, Inc.

Helping you become healthy, comfortable and efficient at home

Jonathan Waterworth

Owner

AZ Energy Efficient Home



Robert Hamerly

Principal

GreenSavers



GreenSavers

Tom Carter

Executive Director

Efficiency First



Topics for Discussion

Home Performance is more than just efficiency! Home Performance is also about jobs, small businesses, supporting the local economy through business taxes paid, economic development and improving existing housing stock.



Best Practices

Failures

Industry
Barriers

What are
contractors
experiencing?

What are you
hearing?

National
Trends

Business
Models

Selling Home
Performance

Health, Safety
and Comfort

Final Questions and Wrap Up

